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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,653	07/19/2005	Takayuki Murakami	L9289.05156	8852

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EXAMINER	
BOLOURCHI, NADER	

ART UNIT	PAPER NUMBER
2611	

MAIL DATE	DELIVERY MODE
05/14/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/542,653	MURAKAMI ET AL.	
	Examiner	Art Unit	
	NADER BOLOURCHI	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☒ Claim(s) *1-8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 July 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/19/2005 and 2/15/2006* .
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. It is noted that this application appears to claim subject matter disclosed in prior International Application PCT/JP03/13807, filed 10/29/2003. A reference to the prior application must be inserted as the first sentence(s) of the specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e), 120, 121, or 365(c). See 37 CFR 1.78(a). For benefit claims under 35 U.S.C. 120, 121, or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of all nonprovisional applications. If the application is a utility or plant application filed under 35 U.S.C. 111(a) on or after November 29, 2000, the specific reference to the prior application must be submitted during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior application. If the application is a utility or plant application which entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the specific reference must be submitted during the pendency of the application and within the later of four months from the date on which the national stage commenced under 35 U.S.C. 371(b) or (f) or sixteen months from the filing date of the prior application. See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is

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considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A benefit claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed benefit claim under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

If the reference to the prior application was previously submitted within the time period set forth in 37 CFR 1.78(a), but not in the first sentence(s) of the specification or an application data sheet (ADS) as required by 37 CFR 1.78(a) (e.g., if the reference was submitted in an oath or declaration or the application transmittal letter), and the information concerning the benefit claim was recognized by the Office as shown by its inclusion on the first filing receipt, the petition under 37 CFR 1.78(a) and the surcharge under 37 CFR 1.17(t) are not required. Applicant is still required to submit the reference in compliance with 37 CFR 1.78(a) by filing an amendment to the first sentence(s) of the specification or an ADS. See MPEP § 201.11.

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Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 7/19/2005 and 2/15/2006 have been considered and made of record by the examiner.

Drawings

3. Figures 1-3 should be designated by a legend such as **--Prior Art--** because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance

Specification

4. The disclosure is objected to because of the following informalities: Information provided in pages 25 and 26 are redundant and should be removed

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the corrected channel estimate value" in lines 7 and 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 recites the limitation "the modulation scheme" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 4 recites the limitation "the own apparatus" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "the signal despread" in line 7. There is insufficient antecedent basis for this limitation in the claim. Does applicant mean to say "said despread received signal"?

Claims 3, 6, and 7 are rejected due to their dependency to rejected claim 1.

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Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakamura et al. (US 6,853,631 B1).

Regarding claim 1, Nakamura et al. disclose a reception apparatus (Fig. 2: Fig. 5; Fig. 10; Fig. 11) comprising: a channel estimation section that acquires a channel estimate value using a received signal ("channel estimation" in col. 2: line 65 to col. 3: line 16); a phase rotation section that carries out phase rotation on said channel estimate value ("phase rotation" in col. 3: lines 16-29); and a coherent detection section that carries out coherent detection of said received signal using the corrected channel estimate value obtained through the phase rotation ("RAKE: in col. 3: lines16-34; Examiner notes that only in coherent detection phase estimation takes place) .

Regarding claim 2, Nakamura et al. disclose as stated in rejection of claim 1 above. Nakamura et al. also disclose that phase rotation section carries out phase rotation on said channel estimate value by an amount of phase rotation determined according to the modulation scheme of the received signal ("the demodulated data signal D_{11} is also

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inputted to the multiplier" in col. 3: lines 14-29; Examiner notes that demodulated data inherently is determined according to their modulation scheme).

Regarding claim 3, Nakamura et al. disclose as stated in rejection of claim 1 above. Nakamura et al. also disclose that phase rotation section carries out phase rotation on said channel estimate value by (.pi./4) ("-45 degree" in col. 11: lines 27-42).

Regarding claim 4, Nakamura et al. disclose as stated in rejection of claim 1 above. Nakamura et al. also disclose that phase rotation section carries out phase rotation on said channel estimate value by an amount of phase rotation determined in accordance with a channelization code assigned to the own apparatus ("spreading code" in col. 2: line 65 to col. 3: line 26; Examiner notes that channelization code are used for spreading/despreading of the signal which is used to find amount of phase rotation; Col. 9: lines 28-52 for Fig. 8).

Regarding claim 6, Nakamura et al. disclose as stated in rejection of claim 1 above. Nakamura et al. also disclose that radio communication terminal apparatus comprising the reception apparatus according to claim 1 ("communication system" in Fig. 1 and Fig. 2 and described in col. 1: lines 12-15).

Regarding claim 7, Nakamura et al. disclose as stated in rejection of claim 1 above. Nakamura et al. also disclose that radio communication base station apparatus

comprising the reception apparatus according to claim 1 ("communication system" in Fig. 1 and Fig. 2 and described in col. 1: lines 12-15).

Regarding claim 8, Nakamura et al. disclose a reception method (Fig. 2: Fig. 5; Fig. 10; Fig. 11) comprising: a step of acquiring a channel estimate value using a received signal ("channel estimation" in col. 2: line 65 to col. 3: line 16); a step of carrying out phase rotation on said channel estimate value ("phase rotation" in col. 3: lines 16-29); and a step of carrying out coherent detection of said received signal using the corrected channel estimate value obtained through the phase rotation ("RAKE: in col. 3: lines16-34; Examiner notes that only in coherent detection phase estimation takes place).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention

was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. in view of Buehrer et al. (US 6,363,103 B1).

Regarding claim 5, Nakamura et al. disclose as stated in rejection of claim 1 above. Nakamura et al. also disclose that a despreading section that despreads said received signal by multiplying the received signal by an spreading code ("spreading code" in col. 2: line 65 to col. 3: line 26;); and an interference cancellation section that cancels interference from the signal despread by said despreading section using said corrected channel estimate value ("the phase rotation ... is compensated for by ... the estimation value" in col. 3: lines 14-29). However, Nakamura et al. does not explicitly disclose that the spreading code is a Hadamard matrix (AKA WALSH-HADAMARD).

Buehrer et al. disclose using Hadamard (col. 2: lines 18-26) for spreading. Therefore, It would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teaching of Nakamura et al. and Buehrer et al. for the purpose of interface cancellation) as suggested by Buehrer et al. (col. 1: lines 7-11).

9. Applicant is required to provide "argument against the reason" in response to "NOTICE OF REASON FOR REJECTION" (see below, emphasis added) along with

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translation of related references, which has been cited but not submitted with IDS, in respond to this instant office action :

NOTICE OF REASON FOR REJECTION

Dispatch Date	November 15, 2005
Japanese Patent Application Number	2002-301946
Drafting Date	November 8, 2005
Examiner of Patent Office	Ken'ichi Ishii 3251 5K00
Attorney	Kimihito WASHIDA
Applied Provision	Sections 29(1) and 29(2)

This application should be refused for the reason mentioned below. If the applicant has any argument against the reason, such argument should be submitted within 60 days from the date on which this notification was dispatched.

REASONS

(Reason A)

The invention(s) in the claim(s) listed below of the subject application should not be granted a patent under the provision of Patent Law Section 29(1)(iii) since it is an invention(s) described in the publication(s) listed below which was distributed, or an invention(s) made accessible to public through electric telecommunication line, in Japan or foreign countries prior to the filing of the subject application.

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(Reason B)

The invention(s) in the claim(s) listed below of the subject application should not be granted a patent under the provision of Patent Law Section 29(2) since it could have easily been made by persons who have common knowledge in the technical field to which the invention(s) pertains, on the basis of invention(s) described in the publication(s) listed below which was distributed, or invention(s) made accessible to public through electric telecommunication line, in Japan or foreign countries prior to the filing of the subject application.

Note (see the list of cited references below)

[Regarding reason A]

Claims: 1-3, 6-8

Cited Reference: 1

Remarks:

Cited reference 1 (in particular, claim 7 and [0044]-[0053]) discloses applying phase rotation (45 degrees, for example) to a channel estimation value in accordance with the modulation scheme of the received signal, and this corresponds to the invention according to claims 1-3 and 6-8 of the subject application.

Claims: 1-3, 6-8

Cited Reference: 2

Remarks:

Cited reference 2 (in particular, claims 3, 5 and [0021]-[0039]) discloses applying phase rotation (45 degrees, for example) to a channel estimation value in accordance with the modulation scheme of the received signal, and this corresponds to the invention according to claims 1-3 and 6-8 of the subject application.

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[Regarding reason B]

Claims: 1-3, 6-8

Cited Reference: 1

Remarks:

Cited reference 1 (in particular, claim 7 and [0044]-[0053]) discloses applying phase rotation (45 degrees, for example) to a channel estimation value in accordance with the modulation scheme of the received signal, and this corresponds to the invention according to claims 1-3 and 6-8 of the subject application.

Claims: 1-3, 6-8

Cited Reference: 2

Remarks:

Cited reference 2 (in particular, claims 3, 5 and [0021]-[0039]) discloses applying phase rotation (45 degrees, for example) to a channel estimation value in accordance with the modulation scheme of the received signal, and this corresponds to the invention according to claims 1-3 and 6-8 of the subject application.

Claims: 5

Cited Reference: 1-5

Remarks:

Spreading and despreading processing using the Hadamard matrix, and joint detection processing for executing interference cancellation using channel estimation values have been in the public domain (see reference 2 for the former and references 4 and 5 for the latter). When there is need, one of skill in the art would readily adopt these processing to the invention disclosed in cited references 1 and 2.

No other reason(s) for rejection of claims according to this invention has been found except for the claim(s) indicated in this notice of reason for rejection. If, however, any new reason for refusal is found in future, a further notice will be issued.

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List of Cited References

1. Japanese Laid-Open Patent Publication No.2000-252957

2. Japanese Laid-Open Patent Publication No.2001-111455

3. Published Japanese Translation of PCT International Publication No.HEI11-502097

4. Vollmer, M. et. al., Comparative study of joint-detection techniques for TD-CDMA based mobile radio systems, Selected Areas in Communications, IEEE Journal on, IEEE, 2001, August, Vol.19 No.8, oo.1461-1475.

5. Kawahara, T. et. al., Joint decorrelating multiuser detection and channel estimation in asynchronous CDMA mobile communications, Vehicular Technology, IEEE Transactions on, IEEE, 1995, August, Vol.44 No.3, pp.506-515.

Remarks

10. No claim is allowed.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nader Bolourchi whose telephone number is (571) 272-8064. The examiner can normally be reached on M-F 8:30 to 4:30.

12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David. C. Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

/David C. Payne/

Supervisory Patent Examiner, Art Unit 2611

/N. B./
Examiner, Art Unit 2611
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